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China Equity Strategy | Asia Pacific

Exposure Guide for US/China Tension Escalation; Sector Implications for US & China

Reported US regulatory actions on Chinese software confirm our multipolar world thesis. Higher sensitivity for Chinese firms with US exposure concentrated in Tech HW, Consumer Durables & Pharma. Near-term market impact to be limited given Chinese internet companies' small US market share.

Equity strategy: We analyze company and industry level exposure by Chinese companies to potential regulatory escalation risk from the US to restrict more Chinese firms in light of the latest move on Chinese mobile applications (see Financial Times article). Our proprietary global revenue exposure data shows:

1) JOYY has the highest US revenue exposure (7%) within the Chinese internet space; Agora has the highest exposure (8%) within the software space.

2) Sector-wise, Tech Hardware/Semis are the most exposed with 11 listed Chinese companies sourcing >30% of their revenue from the US.

3) Consumer Durables and Pharma also have sizeable exposure, each claiming 3 listed companies in the top 20 list ranked by US revenue exposure.

Exhibit 1: US revenue exposures for China internet and software stocks

				Revenue Exposure to	
No.	Ticker	Company	GICS Industry Group	US	ex US & China/HK
1	API.O	Agora Inc	Software & Services	8%	14%
2	YY.O	JOYY Inc.	Media & Entertainment	7%	37%
3	NTES.O	NetEase, Inc	Media & Entertainment	2%	13%
4	0700.HK	Tencent Holdings Ltd.	Media & Entertainment	2%	6%
5	TCOM.O	Trip.com Group Ltd	Retailing	1%	18%
6	MOMO.O	Momo Inc.	Media & Entertainment	1%	1%
7	HUYA.N	HUYA Inc	Media & Entertainment	0%	4%

Source: Morgan Stanley Research. Data based on 2020 revenue estimates (2019 for Trip.com).

We expect limited market-level impact at this stage given Chinese companies' small US market share (aggregate US revenue exposure for MSCI China universe is 2.4%). **Continue to prefer A-shares within the China equity space** given their resilience during US/China tension and better reaction to macro policy support.

Macro/public policy: The developments crystallize how the US is willing to use non-tariff measures to create barriers around deployment technologies that are seen as a potential economic or national security threat. We expect that the political sentiment supporting this position may not dissipate soon, given the US's hawkish stance. To mitigate external challenges in a post-COVID-19 deglobalization world, Beijing will likely pivot to the domestic market, speed up new urbanization, economic opening, and financial market reforms to promote tech localization. (Continued below.)

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Internet/software space (China): Globalization as a key growth driver for China internet stocks could be curbed. The stocks and verticals that have relatively higher exposure to the US at present or rely on the US for future growth include mainly the online entertainment apps (mobile games, streaming media, etc.) and messaging/social networking (none with >10% US revenue exposure currently). We think mobile games have lower risk given lower personal information requirements and easier customizing to fit the requirement of each jurisdiction, compared to video streaming/messaging/social networking apps, which have more user generated content.

Internet/software space (US): For the internet players, the extent to which China-based companies have a more difficult time competing in the US is likely to act as a stronger competitive moat for the current US champions. However, China-based advertiser spending could be hurt. Increased geopolitical tension could also prolong any video game approval processes. We see the most near-term risk for ATVI. In the software space, US software companies generally have limited revenue exposure to China, mitigating any potential impact from escalating tensions across the MS coverage group. The most direct impact, however, is to Microsoft, who is a potential acquirer of TikTok's US operations. Given the strength of the asset, solid recent execution and multiple areas of synergies, we believe a potential deal for TikTok's US operations would be a compelling strategic fit for Microsoft.

Tech hardware/Apple: For China - near-term, we see little impact on global smartphone and/or semi dynamics given the still small share of Chinese smartphones in the US market and the easiness of hardware configuration. **For Apple** – We believe Apple is unlikely to be a retaliation target because restricting the sale of Apple devices or services within China would directly harm the local economy by lowering aggregate demand and heightening the risk of job losses. Moreover, Apple's efforts in appeasing both the US and Chinese governments and in adhering to Chinese government policies should reduce the risk of meaningful retaliation.

In the long run, the world continues to shift towards a multipolar world, in which the US and China would "increasingly compete directly in multiple spheres ranging from technology, security, health policy, financial markets, and corporate governance". **Regional champions are also more likely than global winners**, as regulatory intervention on national security grounds limits the ability of firms to globalize their business models and raise barriers to entry in home markets.

Addressing Investor Questions – Which Companies are Most Exposed to the US Market under Rising US/China Tensions?

Laura Wang, Ronald Ho

We analyze the Chinese listed company universe based on their industry/sector coverage and their US market exposure to understand who might be subject to US government regulatory action were the US government to apply restrictions on a broader scale, as reported in an August 3rd Financial Times article - "US to widen action against Chinese tech groups beyond TikTok". The revenue exposure analysis is based on Morgan Stanley's proprietary Global Exposure Guide, which is refreshed on an annual basis.

We look at three scoping criteria for the purposes of this exercise:

1) Which Chinese internet and software companies have sizeable US/overseas revenue exposure? (Exhibit 2) Agora and JOYY (YY) are the most exposed to the US market. Within the software space, Agora has the biggest revenue exposure to the US (8%), and 14% revenue from other parts of world (ex the US and China). Within the internet space, YY has the largest US revenue exposure (estimated at 7% of total revenue).

In a scenario where other countries/markets other than the US eventually decide to take regulatory action against Chinese software and apps, our analysis shows that YY, Agora and Trip.com are the most exposed with 44%, 22%, and 19% of revenue generation from outside China, followed by NetEase and Tencent, with 15% and 8% of total revenue generated outside China, respectively. For detailed company level implications please refer to our internet team's comments here Internet/mobile games - May face different scrutiny.

Exhibit 2: US revenue exposures for Chinese internet and software stocks - Agora and YY are the most exposed to the US market

				Revenue Exposure to	
No.	Ticker	Company	GICS Industry Group	US	ex US & China/HK
1	API.O	Agora Inc	Software & Services	8%	14%
2	YY.O	JOYY Inc.	Media & Entertainment	7%	37%
3	NTES.O	NetEase, Inc	Media & Entertainment	2%	13%
4	0700.HK	Tencent Holdings Ltd.	Media & Entertainment	2%	6%
5	TCOM.O	Trip.com Group Ltd	Retailing	1%	18%
6	MOMO.O	Momo Inc.	Media & Entertainment	1%	1%
7	HUYA.N	HUYA Inc	Media & Entertainment	0%	4%

Source: Morgan Stanley Research. Data based on 2020 revenue estimate

2) Which Chinese technology companies have the highest US/overseas revenue exposure? We identify 11 listed Chinese companies with over 30% of their revenue coming directly from the US. Zhongji Innolight Co. is the most exposed to the US market with 74% of revenue sourced from there. However, if we look at global (non mainland China/Hong Kong) revenue exposure, Universal Scientific Ind. jumps to the top with 80% of revenue sourced from outside China. For more thoughts on the Tech Hardware sector, please refer to our Tech Hardware team's comments here Asia Tech - Little Impact In Short Term, Maybe An Upside To Demand In Long Term.

Exhibit 3: Top 20 Chinese tech stocks based on revenue exposure to the US

				Revenue Exposure to	
No.	Ticker	Company	GICS Industry Group	US	ex US & China/HK
1	300308.SZ	Zhongji Innolight Co Ltd	Technology Hardware & Equipment	74%	0%
2	601231.SS	Universal Scientific Ind. (Shanghai)	Technology Hardware & Equipment	70%	10%
3	002475.SZ	Luxshare Precision Industry Co., Ltd.	Technology Hardware & Equipment	70%	0%
4	002241.SZ	GoerTek Inc	Technology Hardware & Equipment	60%	18%
5	300136.SZ	Shenzhen Sunway Communication Co. Ltd.	Technology Hardware & Equipment	51%	0%
6	300433.SZ	Lens Technology	Technology Hardware & Equipment	50%	20%
7	2018.HK	AAC Technologies Holdings	Technology Hardware & Equipment	46%	8%
8	6088.HK	FIT Hon Teng Ltd	Technology Hardware & Equipment	44%	24%
9	603986.SS	GigaDevice Semiconductor Beijing Inc	Semiconductors & Semiconductor Equipment	40%	5%
10	0992.HK	Lenovo	Technology Hardware & Equipment	32%	44%
11	3396.HK	Legend Holdings Corp	Technology Hardware & Equipment	31%	44%
12	002236.SZ	Dahua Technology Co. Ltd.	Technology Hardware & Equipment	20%	16%
13	002281.SZ	Accelink Technologies Co. Ltd.	Technology Hardware & Equipment	20%	15%
14	002745.SZ	MLS Company Limited	Semiconductors & Semiconductor Equipment	15%	55%
15	002456.SZ	Shenzhen O-film Tech	Technology Hardware & Equipment	15%	5%
16	688008.SS	Montage Technology Co Ltd	Semiconductors & Semiconductor Equipment	15%	5%
17	600584.SS	Jiangsu Changjiang Electronics Tech	Semiconductors & Semiconductor Equipment	10%	20%
18	603501.SS	Will Semiconductor Co Ltd Shanghai	Semiconductors & Semiconductor Equipment	10%	20%
19	601138.SS	Foxconn Industrial Internet Co. Ltd.	Technology Hardware & Equipment	10%	70%
20	0981.HK	SMIC	Semiconductors & Semiconductor Equipment	8%	30%

Source: Morgan Stanley Research. Data based on 2020 revenue estimates

3) Which Chinese companies from all industries/sectors have the most US/overseas revenue exposure? This screening caters to an extreme scenario in which US regulatory actions were to expand to restrict purchase/usage of any products/services made in/originated from China. Eleven out of the top 20 names actually overlap with the Tech company list above, highlighting that the Technology sector is the most exposed to US/China tension escalation risks. **Aside from the Tech sector, Consumer Durables & Apparel and Pharma each claim 3 companies in the list, marking their relatively high sensitivity to the situation as well.**

Exhibit 4: Top 20 Chinese stocks based on revenue exposure to the US

				Revenue Exposure to	
No.	Ticker	Company	GICS Industry Group	US	ex US & China/HK
1	300308.SZ	Zhongji Innolight Co Ltd	Technology Hardware & Equipment	74%	0%
2	601231.SS	Universal Scientific Ind. (Shanghai)	Technology Hardware & Equipment	70%	10%
3	002475.SZ	Luxshare Precision Industry Co., Ltd.	Technology Hardware & Equipment	70%	0%
4	002241.SZ	GoerTek Inc	Technology Hardware & Equipment	60%	18%
5	0288.HK	WH Group	Food Beverage & Tobacco	58%	9%
6	2359.HK	WuXi AppTec Co Ltd	Pharmaceuticals, Biotechnology & Life Sciences	55%	20%
7	300136.SZ	Shenzhen Sunway Communication Co. Ltd.	Technology Hardware & Equipment	51%	0%
8	1691.HK	JS Global Lifestyle Co Ltd	Consumer Durables & Apparel	50%	7%
9	300433.SZ	Lens Technology	Technology Hardware & Equipment	50%	20%
10	2269.HK	WuXi Biologics Cayman Inc	Pharmaceuticals, Biotechnology & Life Sciences	50%	11%
11	2018.HK	AAC Technologies Holdings	Technology Hardware & Equipment	46%	8%
12	1316.HK	Nexteer Automotive Group	Automobiles & Components	45%	37%
13	6088.HK	FIT Hon Teng Ltd	Technology Hardware & Equipment	44%	24%
14	300347.SZ	Hangzhou Tigermed Consulting	Pharmaceuticals, Biotechnology & Life Sciences	43%	0%
15	300207.SZ	Sunwoda Electronic Co., Ltd.	Capital Goods	40%	0%
16	603986.SS	GigaDevice Semiconductor Beijing Inc	Semiconductors & Semiconductor Equipment	40%	5%
17	002292.SZ	Alpha Group	Consumer Durables & Apparel	35%	0%
18	0992.HK	Lenovo	Technology Hardware & Equipment	32%	44%
19	0551.HK	Yue Yuen Industrial Hldg	Consumer Durables & Apparel	31%	54%
20	3396.HK	Legend Holdings Corp	Technology Hardware & Equipment	31%	44%

Source: Morgan Stanley Research. Data based on 2020 revenue estimates

Exhibit 5: Top 20 Chinese companies ranked by US revenue exposure - Breakdown by industry group: Tech Hardware, Consumer Durables & Apparel and Pharma claim the most # of companies

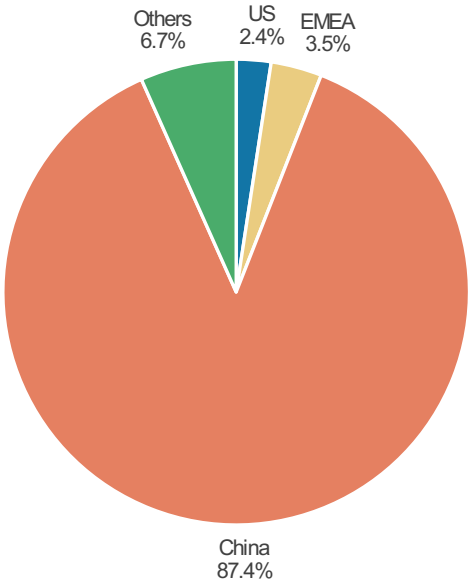
GIC Industry group	# of companies
Automobiles & Components	1
Capital Goods	1
Consumer Durables & Apparel	3
Food Beverage & Tobacco	1
Pharmaceuticals, Biotechnology & Life Sciences	3
Semiconductors & Semiconductor Equipment	1
Technology Hardware & Equipment	10

Source: Morgan Stanley Research.

Market-level impact limited in near term; Supports preference for A-shares

We continue to highlight US/China tension as the biggest near-term uncertainty to China's equity market. We advise extra caution against top-down regulatory risk along with company fundamentals when it comes to stock picking. That said, the overall Chinese equity market impact should be limited given that the market share of Chinese companies in the US in general is still very small, and the aggregate US revenue exposure of the Chinese equity space is extremely limited. For example, the total index weight of the top 20 most US-market exposed Chinese companies is only 1.6% in MSCI China. Total US revenue exposure for the entire MSCI China universe is only 2.4%.

Exhibit 6: Regional revenue exposure for MSCI China



Source: Morgan Stanley Research. Data based on 2020 revenue estimates

We continue to recommend OW A-shares within China's equity space given their limited foreign ownership exposure and their tendency to react more positively to onshore macro policy support. For example, Hang Seng Index and HSCEI were down by 0.98% and 0.45%, respectively, on Aug. 3 post the US regulatory action news, while CSI300 was up by 1.62% on the same day, reacting positively to the news that the

implementation deadline for the new asset management rules has been extended for another year. For more details please visit our OW A-share note here.

In the long run, we expect regulatory actions of a similar nature to continue given the near-term US election pressure and, more importantly, as the world goes through a structural shift towards a multipolar world, in which the US and China "increasingly compete directly in multiple spheres ranging from technology, security, health policy, financial markets, and corporate governance". Regional champions are more likely than global winners as regulatory intervention on national security grounds would limit the ability of firms to globalize their business models and raise barriers to entry in home markets. For more details please refer to Another Marker on the Road to a Multipolar World. We also expect Chinese policy makers to accelerate their initiatives to mitigate these external challenges with more emphasis on technology localization, growing the domestic market, and further reforms and market opening-up efforts.

US/China Public Policy – Raising Non-Tariff Barriers

Michael Zezas, Robin Xing

US reaction function: The TikTok developments are certainly not the first example of the US executive branch using its power to disintermediate foreign investment in US-based firms. Yet it crystallizes in a demonstrative way how the US is willing to use non-tariff powers to put barriers around the deployment technologies that are seen as an economic or national security threat. We do not think the political sentiment that supports such behavior will dissipate soon, even if the upcoming US election yields a change in power. Leaders of both parties claim hawkish positions on China, and public opinion surveys tell a similar story about the voters.

While this does not mean that the US and Chinese economies are broadly decoupling, it does mean that globalization overall is slowing and that in key sectors there may emerge multiple standards throughout the globe on supply chains and technology products. The US and China would increasingly compete directly in multiple spheres ranging from technology, security, health policy, financial markets, and corporate governance in a post-COVID-19 multipolar world. We detailed this phenomenon in a recent Blue Paper, building on a framework we first introduced in 2019. In short, many sectors whose companies who had pursued a global strategy may have to trim their sails (i.e., US Internet, Autos), and others who struggled to compete with them may find less competition domestically (i.e., Asia Tech, EU Telecom).

China's reaction function: We maintain our framework that while COVID-19 has modified incentives for the US and China, rhetoric and regulation measures are more likely in the coming months than tariffs. In response to the US's non-tariff barriers, China would likely prioritize job market stability by responding with non-tariff measures but keeping the Phase 1 deal intact. That said, the political value of the Phase 1 deal could diminish if the US imposes severe financial sanctions over Hong Kong issues.

In the medium term, the potential restrictions on more Chinese mobile applications would likely accelerate Beijing's initiatives to mitigate secular external challenges in a post-COVID-19 deglobalization world. Beijing called for pivoting to the domestic market, speeding up new urbanization and economic opening to retain supply chains, continued financial market reforms, and promoting tech localization.

- **Pivoting to the domestic market:** To promote "domestic economic circulation" by providing a stable business environment to preserve the vitality of market entities and speed up urbanization 2.0 and new infrastructure, to unleash growth potential and maintain productivity growth at a healthy level.
- **Deepening economic opening-up with wider market access:** This aims to attract more MNCs to adopt an "in China, for China" strategy and thus retain supply chains.
- **Tech localization efforts:** To accelerate self-sufficiency in semiconductors and software amid rising US tech barriers. Indeed, one year after Huawei was put on the US entity list, such efforts have been accelerated and some progress has been made (particularly memory, analog, and radio frequency semis). Though still

dependent on foreign technology over the next 5-10 years, our sector analysts' base case is continued localization, given China's ongoing investments and its proximity to hardware manufacturing supply chains, while the US would place certain restrictions on technology exports to companies on the entity list.

- **Financial reform and opening up:** Beijing will likely continue the regulatory reform of the equity market to promote the homecoming of Chinese ADRs and attract capital inflows.

Michael Zezas is a fixed income strategist and Robin Xing is an economist, and they are not opining on equity securities.

China internet/mobile games – May face different scrutiny

Gary Yu, Alex Poon, Alex Ko, Jenny Chen

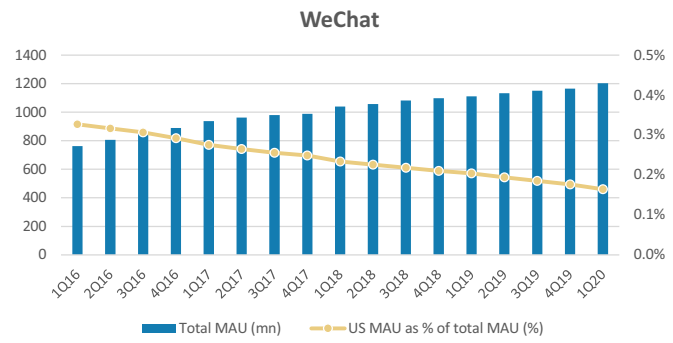
Globalization is one of the key growth drivers for China internet stocks as user growth decelerates and competition intensifies in China. A few countries have initiated a ban or an intention to ban certain Chinese apps, particularly TikTok and WeChat, due to user data privacy concerns, with India first on June 29, followed by the US on July 7, and recently Australia and Japan. India listed the names of 59 Chinese apps on June 29, including applications categories like utilities (web browser, virus cleaner, maps), video streaming (TikTok, Likee, Bigo Live), social networks (Weibo), and games (Clash of Kings).

The stocks and verticals that have relatively higher exposure to US at present or rely on the US for future growth include 1) social networks and instant messaging, 2) mobile games and 3) video streaming. At this point, we think social networks/instant messaging and video streaming could face higher scrutiny due to the creation of content and/or input/exchange of more personal information, compared to mobile games, which can have customized personal information policies to fit the requirements of each jurisdiction, as well as having less personal information.

Social networks & instant messaging (Tencent and Weibo)

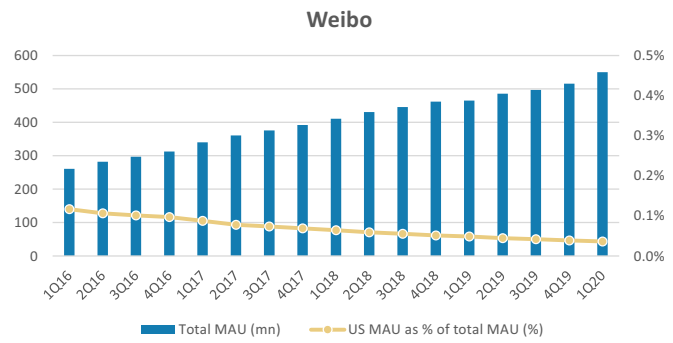
We think the impact from potential restrictions on Chinese social network and instant message apps should be relatively manageable, given an immaterial overseas user base for apps like WeChat and Weibo. For perspective, WeChat's MAU in the US is only 1.8mn vs. total WeChat MAU of 1.2bn; Weibo's MAU in the US is only 0.2mn vs. total Weibo MAU of 550mn, according to Sensor Tower and company data, we thus expect a limited impact on Chinese social network & instant messaging names.

Exhibit 7: WeChat MAU



Source: Company data, Sensor Tower, Morgan Stanley Research

Exhibit 8: Weibo MAU



Source: Company data, Sensor Tower, Morgan Stanley Research

Mobile games (Tencent and NetEase)

In 1H20, overseas revenue earned by Chinese publishers grew 36% YoY to US$7.6bn, outpacing domestic market growth of 22% YoY. The US and Japan, the second- and third-largest video game markets globally after China, contributed 28% and 23% of the

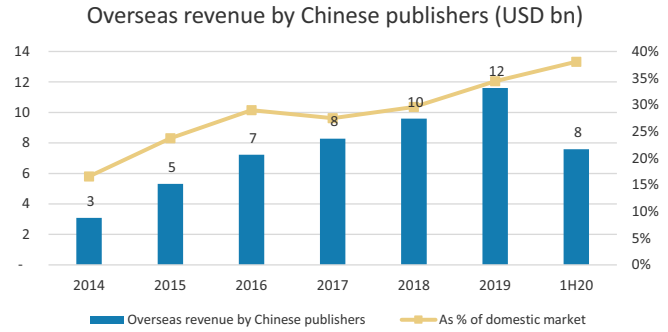
overseas revenues, respectively, in 1H20, followed by South Korea at 10%.

Tencent had 23% of game revenue from overseas markets in 4Q19. PUBG Mobile is the biggest contributing mobile game to Tencent's overseas game revenue, which grossed over US$400mn outside China in 1H20 (+40% YoY; +20% HoH). For NetEase, the company generated game revenue of Rmb5.1bn from overseas markets in 2019, mainly from Japan, and the company is planning to expand into the US from 2H20 onwards, driven by the launch of a few foreign IPs on hand including Harry Potter: Magic Awakened, Lord of the Rings: Rise to War, Diablo Immortal and Marvel.

With regards to the privacy issues in India, PUBG Mobile has recently revised its privacy policy in India.

1. Data of Indian gamers is stored on servers located in India only.
2. The support, engineering and other teams for Indian gamers are located in India only.
3. The data that PUBG Mobile collects from its users include open ID, IP address, device information (such as application version, battery level, WiFi strength, available space, network type, OS version, platform, carrier, country code, series ID, Android ID, MAC and IDFV), registration time, login time, and information regarding users' use of the Game Services, such as the date and time stamps of actions.
4. Where PUBG Mobile permits any third parties to collect and use of personal information, PUBG Mobile will take reasonable measures to ensure that the third parties do not further disclose personal information.
5. Data content is stored between 7 to 30 days until after account deletion.

Exhibit 9: Overseas game revenue earned by Chinese publishers is almost equivalent to 40% of the domestic market



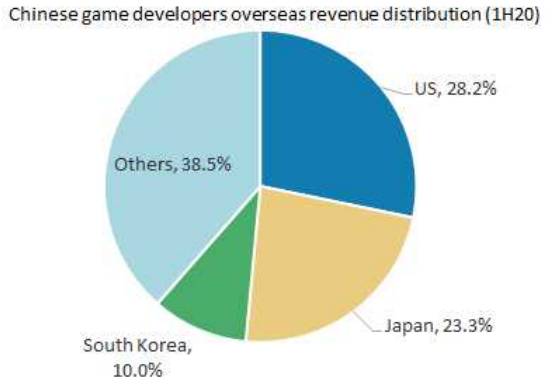
Source: GPC, Morgan Stanley Research

Exhibit 10: Tencent and NetEase game revenue and profit exposure to overseas markets

Company	Overseas game revenue	As % of total game revenue	As % of total revenue	As % of net profit
Tencent (4Q19)	~US$1bn (Rmb7bn) including Supercell	23%	7%	7%
NetEase (2019)	~US$730mn (Rmb5.1bn)	11%	9%	7%

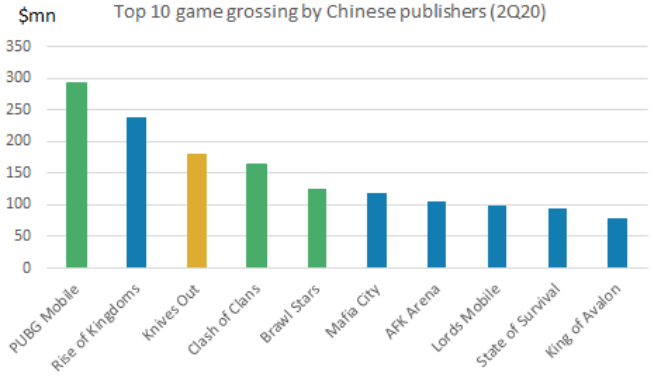
Source: Company data, Morgan Stanley Research estimates

Exhibit 11: Chinese developers overseas revenue by region



Source: GPC, Morgan Stanley Research

Exhibit 12: Top 10 overseas games' grossing by Chinese publishers



Note: *PUBG Mobile*, Clash of Clans, Brawl Stars by Tencent (including Supercell), *Knives Out* by NetEase.
Source: Sensor Tower, Morgan Stanley Research

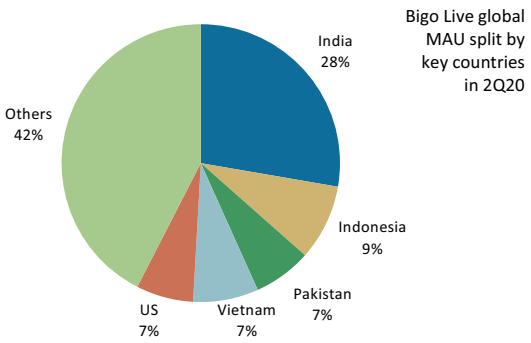
Video streaming (TikTok and JOYY)

We think globalization of live streaming and short-video is a secular growth story globally, given the rising popularity of TikTok and global social networking apps like Facebook and Instagram also added video features.

JOYY's overseas business is operated by Bigo (fully acquired in March 2019). Its headquarters are in Singapore and its datacenters are located mainly in Singapore, and also in Hong Kong (migrating to Singapore as well). JOYY's apps (Likee, Bigo Live, Hago, IMO) are only mentioned in the list from India, but not mentioned by the US, Australian nor Japanese governments so far. We estimate Bigo had total revenue exposure of about 15-20% to the US and Japan combined in 1Q20. We remain OW and see 2Q results as a positive event, as growth is not only coming from those countries, but also Middle East, Europe, and Asia Pacific (Korea and New Zealand). Our revenue estimate in 2020 of US$1.4bn is driven by less than 2mn paying users, which is tiny compared to global internet users of over 5bn.

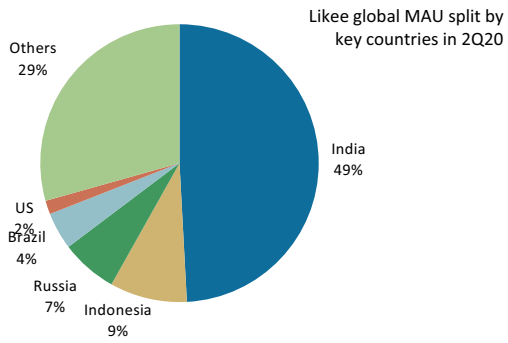
Other video streaming companies, such as Huya, Douyu, Momo, Bilibili, Tencent Music, etc., have limited overseas exposure.

Exhibit 13: Bigo Live (JOYY) MAU by country in 2Q20



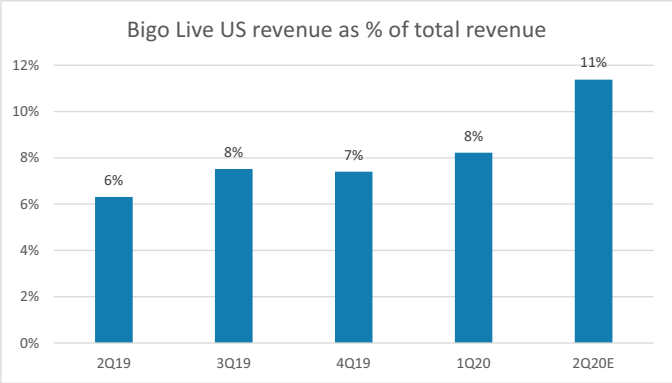
Source: Sensor Tower, Morgan Stanley Research

Exhibit 14: Likee (JOYY) MAU by country in 2Q20



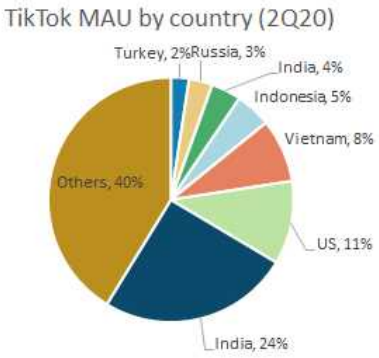
Source: Sensor Tower, Morgan Stanley Research

Exhibit 15: Bigo revenue exposure in US



Source: Sensor Tower, Morgan Stanley Research estimates

Exhibit 16: TikTok MAU by country in 2Q20



Source: Sensor Tower, Morgan Stanley Research

Asia Technology – Little Impact In the Short Term

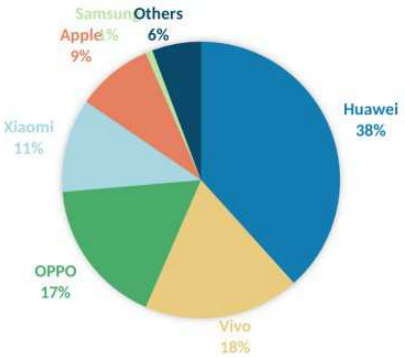
Shawn Kim, Charlie Chan

We view the recent restrictions on chinese apps in the US as part of a broader US-China technology dispute. While not our base case for the tech sector, further action by the US that could hinder China's technological ecosystem development, such as the recent HiSilicon action, may result in non-tariff measures from China, and we believe investors should pay attention to this potential risk as they are to US tariff actions.

We don't expect the dynamics to change if the US makes it illegal for a hardware firm like Samsung or Apple to be capable of downloading Chinese software Apps, given limited share of Chinese smartphones in the US. But it sets the stage for a world where if Chinese internet companies are excluded from key markets and lose key markets, they would therefore forfeit revenue and impact. The key risk for technology companies is the unintended consequences, such as a ban of US products from China, which could impact share dynamics for smartphones within China.

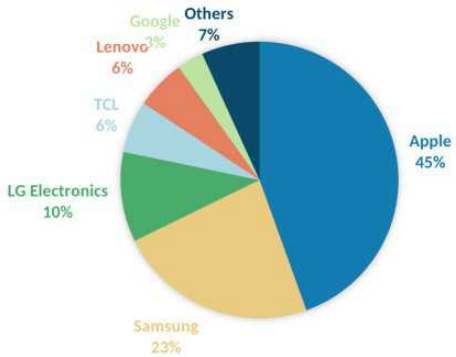
Hardware and semis demand should see little impact in the short term. Based on our industry knowledge, the phone configuration can be decided right before shipment. For example, the language version, embedded apps, hardware feature enabled/disabled can be easily customized for the Indian market vs. the Russian market, etc. Therefore, hardware semi demand should not be much impacted in the short term. But, if in the long term we need two phones (not just two SIM cards) to use two separate sets of software/apps, there is perhaps upside to smartphone hardware demand, i.e., more devices needed, but we see the probability as low given the current uncertainty on the future outcome from tensions.

Exhibit 17: HMOV Dominates China Smartphone Market With 80%+ Market Share, While Apple/Samsung Share At 9%/1% in 2019



Source: IDC, Morgan Stanley Research

Exhibit 18: Apple Is The Largest Player In the N.American Smartphone Market With 45% Market Share, While Samsung is Ranked 2nd



Source: IDC, Morgan Stanley Research

US IT Hardware - Apple Unlikely To Be Retaliation Target

Katy Huberty

Apple's revenue from China is 5x greater than that of other US hardware companies. We estimate that 20% of Apple's 2019 revenue, or $52.4B, came from China. This is ~5x larger than our estimated China revenue from other US hardware vendors, including Dell (US$11.2B), HPQ (US$8.7B), IBM (US$8.1B), and HPE (US$4.4B). While China's response to the US TikTok ban is a risk worth monitoring, the dependency of US Hardware companies, and Apple in particular, on China component and contract manufacturing services lowers the risk, in our view.

Apple is unlikely to be the target of retaliation. Apple plays a pivotal role in the Chinese economy. Apple relies heavily on China to deliver output of over 250M devices annually. In China, this production volume requires millions of workers and up to 450,000 workers in a single location, 9% larger than the combined population of capital cities Des Moines, Iowa and Salt Lake City, Utah. Apple also leverages an estimated 750 component suppliers across 20+ countries, along with employing thousands of workers at its retail stores across China. If the Chinese government took steps to restrict the sale of Apple devices or services within the country, it would directly harm its own economy by lowering aggregate demand and heightening the risk of job losses.

Apple taking steps to appease both the US and China. At face value, it's easy to jump to the conclusion that because Apple has material exposure to both countries, it's likely to be a pawn for both sides. To Apple's credit, it has addressed concerns of both the Chinese and US governments as the relationship between the two countries has deteriorated. While Apple's concessions to the US are well documented, its work with China is less understood. Just recently Apple took steps to adhere to Chinese government policies around App Store game approvals. On August 1st, Apple removed more than 30,000 apps, 90% of them games, from its App Store in China. These apps were published but not yet approved by China's regulators, which violated Beijing's policy that all apps that are paid or offer in-app purchases must obtain approval. This is one example of how Apple works to adhere to Chinese government policies within the country, which reduces the risk of meaningful retaliation against Apple, in our view.

See limited near-term impact from hypothetical ban of US mobile apps. Speaking hypothetically, if China were to retaliate by banning US mobile applications including Apple's iCloud, Apple Music, and Apple TV+, it would have a minimal near-term impact on Apple Services revenue. We estimate iCloud and Total Music and Video revenue to represent 29% of Apple's total Services revenue in FY21, with lower adoption in China. Assuming adoption that is roughly half the rate of the US, it would imply that less than 3% of Apple's total services revenue would be materially impacted from a Chinese ban on US mobile applications (<1% of Apple's total revenue). Additionally, the vast majority of mobile applications on Apple's App Store in China are developed by Chinese firms, not US developers, and therefore any action taken against the App Store would also harm the Chinese economy (developers collect 70-85% of spend in the App Store) and its consumers. Therefore, we see a low probability that any retaliatory actions would involve Apple's App Store more broadly.

US Internet – Possibly Stronger Moat for US Regional Champions but Potential Hit on China Ad Revenue

Brian Nowak

1) Starting with the most press-worthy, as detailed here, in our view any potential sale of TikTok to a US entity (reportedly Microsoft) essentially just shifts the needed execution steps to compete with the leading US online advertisers from China-based ByteDance… to the new acquirer. Through this lens, the status for the FB/SNAP/GOOGL/TWTR/PINS is the same…as it really comes down to execution at TikTok.

2) That said, bigger picture, the extent to which China-based companies have a more difficult time entering into and/or competing in the US is likely to act as a stronger competitive moat for the current regional champions (FB/SNAP/GOOGL/TWTR/PINS/AMZN).

3) It will also be important to see how the western leaders' "regions" expand if global tension continues…in particular within emerging markets. As one example, the India government's shutdown of TikTok and WeChat should help FB, GOOGL and AMZN build and scale businesses in India (with less competition).

4) From a potential negative impact perspective, while none of the leading US Internet companies has a material presence in China, this could negatively impact their China-based advertiser spend. For perspective, APAC-based advertisers made up 18% of FB's 2Q20 ad revenue, and China-based advertisers made up ~11% of SNAP's 2Q20 ad revenue.

5) In addition, increased geopolitical tension could also prolong any video game approval processes as western publishers work to penetrate the China mobile gaming market. We see the most near-term risk for ATVI and its efforts to get Call of Duty mobile and Diablo mobile approved. That said, we note that we currently assume zero incremental China revenue from those games in our base case (pre-emptively taking a pragmatic approach).

US Software – Limited Overall Exposure, but Microsoft Could Be in a Unique Position to Acquire TikTok Assets

Keith Weiss

Generally, US Software companies have limited revenue exposure to China, mitigating any potential impact from escalating tensions across our coverage group. The most direct impact, however, is to Microsoft, as a potential acquirer of TikTok's US operations. Given the strength of the asset, solid recent execution and multiple areas of synergies, we believe a potential deal for TikTok's US operations would be a compelling strategic fit for Microsoft.

Microsoft Looking to Potentially Shake Up the Social Media Landscape. In a blog post from Sunday night, Microsoft confirmed ongoing discussions with ByteDance on the potential purchase of TikTok's US operations. The two companies have notified the Committee on Foreign Investment of their intent to 'explore a preliminary proposal' involving the purchase of the TikTok service in the United States, Canada, Australia and New Zealand. Further, as comments by President Trump suggested that the White House has put a 45 day countdown on the deal coming together, Microsoft said in the blog post that it will "move quickly" and "in any event complet[e] these discussions no later than September 15, 2020." Microsoft said it "looks forward to continuing dialogue with the United States Government, including with the President." Few concrete details are available in terms of proposed purchase price or the revenue / profitability of the underlying asset – media reports suggest TikTok's US operations have grown from 30 million to over 100 million users over the past year, US operations are at an ~US$500 million revenue scale in 2020 (but continue to burn cash), and put a potential purchase price anywhere from US$15 billion to US$50 billion. However, what we do know is:

1. **TikTok Represents a Dynamic and Fast Growing Asset for Microsoft to Potentially Expand Their Social Media Presence Behind.** With both rapid growth to >100 million users and a demographic rapidly expanding from teenagers into older users, TikTok could immediately make Microsoft a viable player in the consumer oriented social media space (core Facebook has ~247 million US users), beyond the LinkedIn professional network.

2. **TikTok Likely Well Under-Monetized Today**. With initial reports of US$500 million in revenues against 100 million users, the implied US$5 Average Revenue per User (ARPU) would put TikTok below the low end of monetization seen in other social media platforms.

3. **Multiple Avenues of Potential Revenue Synergies for Microsoft**. With a broad existing product portfolio and large existing customer bases, we see potential for synergies in: Advertising – adding an additional channel for advertisers to Bing and LinkedIn; Gaming – integrating with the Xbox ecosystem of nearly 100 million Xbox Live users or the 132 million monthly active users of Minecraft; Commerce – TikTok could represent an new direct to consumer channel for the Dynamics 365 Commerce Engine; and Education – extend Microsoft's learning platform from the Enterprise into a new consumer channel

4. **Azure Represents a Potential Cost Synergy**. Recently, the Information reported TikTok agreed to buy more than US$800 million in cloud services from Google. (The companies did not comment on this report.) Over time assuming Microsoft owned TikTok, we would expect TikTok's cloud needs to be supported by Azure and Microsoft cloud assets.

5. **Microsoft Could Be in a Unique Position to Potentially Get the Deal Done**. With political attention from the White House on TikTok's US operations, other large media vendors currently dealing with regulatory scrutiny and Microsoft holding over US$136 billion in cash on the balance sheet, we see both a strong bargaining position and solid capability to get a potential deal done.

Long-term implications - Another Marker on the Road to a Multipolar World

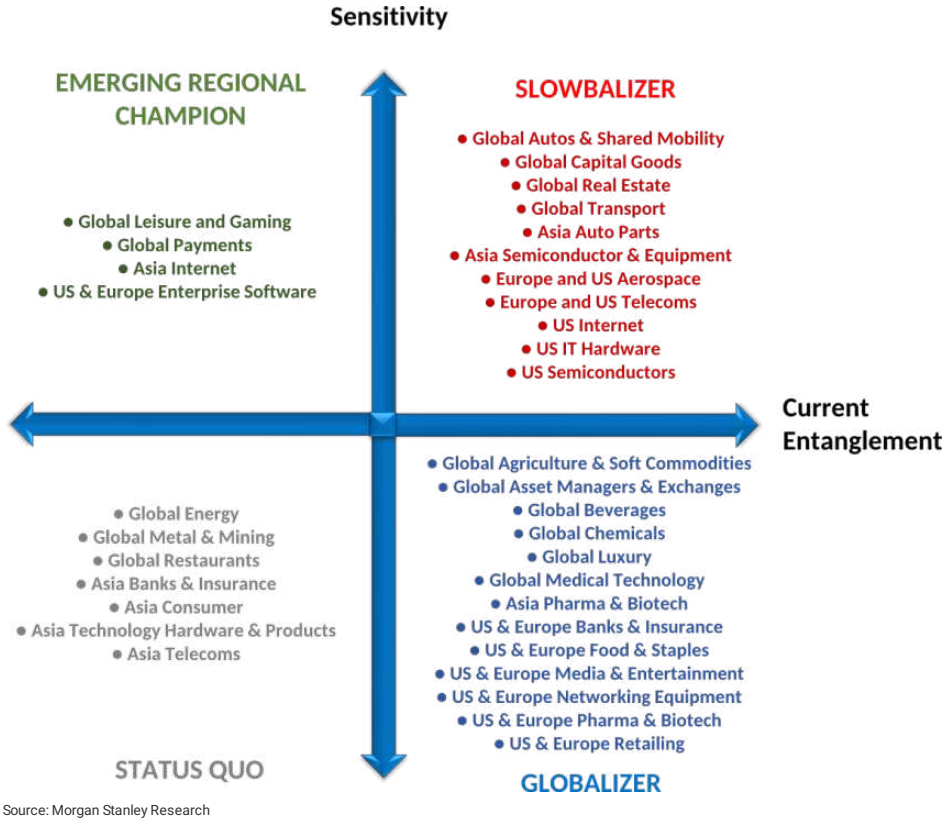
Jonathan Garner, Daniel Blake

Regulatory action by the US on Chinese apps speaks to the ongoing relevance for investors of the structural shift to a Multipolar World. We explored this concept in depth across our global research coverage in our recent Blue Paper, US Public Policy and Global Equity Research: Investing For a Multipolar World, 24 June 2020). In that report we argued that the US and China would "increasingly compete directly in multiple spheres ranging from technology, security, health policy, financial markets, and corporate governance".

For both the China internet and US/European enterprise software sectors, we envisaged a future as "Regional Champions" where regulatory intervention on national security grounds would limit the ability of these firms to globalize their business models, but importantly raise barriers to entry in home markets and entrench local oligopoly power. This would also require third-party countries to engage in a balancing act and in certain sectors require fundamental changes in business models and approach, meaning this theme needs to be assessed globally. The wide-ranging ban on China internet companies imposed by India on 29 June is another potent example of where international growth expectations need to be closely reviewed (see India Technology: Indian government bans 59 apps, 29 June 2020).

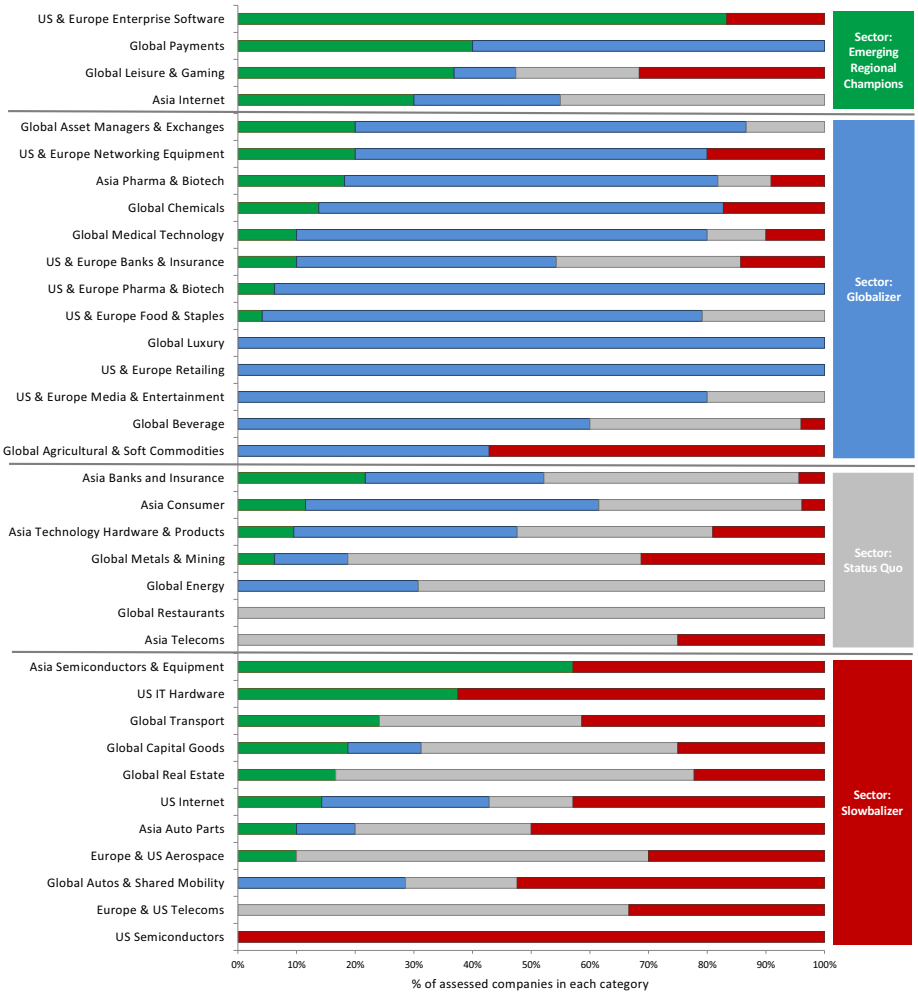
Today's developments certainly speak to the relevance of that concept which stands in contrast to the situation in industries such as Global Beverages or Metals and Mining – where either continued benefits of Globalisation or a Status Quo outcome are in our view more likely – or industries that are more challenged and which we deem as Slowbalisers (including for example, Semiconductors) by the need to duplicate supply chains and work in a two standard world.

Exhibit 19: Where our 35 global/regional sector teams fit in the four quadrants of Slowbalization


Sensitivity
EMERGING REGIONAL CHAMPION
• Global Leisure and Gaming
• Global Payments
• Asia Internet
• US & Europe Enterprise Software
SLOWBALIZER
• Global Autos & Shared Mobility
• Global Capital Goods
• Global Real Estate
• Global Transport
• Asia Auto Parts
• Asia Semiconductor & Equipment
• Europe and US Aerospace
• Europe and US Telecoms
• US Internet
• US IT Hardware
• US Semiconductors
Current Entanglement
• Global Energy
• Global Metal & Mining
• Global Restaurants
• Asia Banks & Insurance
• Asia Consumer
• Asia Technology Hardware & Products
• Asia Telecoms
STATUS QUO
• Global Agriculture & Soft Commodities
• Global Asset Managers & Exchanges
• Global Beverages
• Global Chemicals
• Global Luxury
• Global Medical Technology
• Asia Pharma & Biotech
• US & Europe Banks & Insurance
• US & Europe Food & Staples
• US & Europe Media & Entertainment
• US & Europe Networking Equipment
• US & Europe Pharma & Biotech
• US & Europe Retailing
GLOBALIZER

Source: Morgan Stanley Research

Exhibit 20: Stock-level breakdown by sector and category – Polarization evident in Semis and IT Hardware sectors; Asia Internet and Enterprise Software more clearly in Emerging Regional Champion category, while US Internet more challenged by Slowbalization factors, in our view



Source: Morgan Stanley Research

Valuation Methodology and Risks

JOYY Inc.(YY.O)

US$115: base case value, sum of the parts.

- YY Live: 7x 2020e, discount to Momo core's 7.5x - Momo's strong VAS segment drives a better growth profile.
- Huya: price target, and then apply a stake of 31%.
- Bigo: We value by DCF based on WACC of 15% and terminal growth of 3%.
- Net cash.
- Holding discount of 23% (vs. China Internet peers of 10-60%), offsetting value of Huya and net cash.

Risks to Upside

- Increase in capital returns
- Likee's DAU catches up to TikTok's in any major markets

Risks to Downside

- Market share loss for its core business arising from intense competition
- Bigo fails to see path to profitability

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(as of July 31, 2020)

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	COVERAGE UNIVERSE		INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
STOCK RATING CATEGORY	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MISC
Overweight/Buy	**1288**	**39%**	**337**	**45%**	**26%**	**573**	**39%**
Equal-weight/Hold	**1418**	**43%**	**328**	**44%**	**23%**	**678**	**46%**
Not-Rated/Hold	**4**	**0%**	**1**	**0%**	**25%**	**3**	**0%**
Underweight/Sell	**554**	**17%**	**86**	**11%**	**16%**	**225**	**15%**
TOTAL	**3,264**		**752**			**1479**	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

Analyst Stock Ratings

Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.
Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

Analyst Industry Views

Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.
In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.
Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.
Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

Stock Price, Price Target and Rating History (See Rating Definitions)

Stock Rating History: 8/1/15 : O/I; 8/17/15 : E/I; 2/23/17 : U/I; 5/25/17 : NA/I; 3/28/18 : E/I; 12/2/19 : E/A; 5/20/20 : O/A

Price Target History: 12/24/14 : 95.9; 8/17/15 : 68.5; 7/8/16 : 35; 11/30/16 : 42; 5/25/17 : NA; 3/28/18 : 135; 5/11/18 : 106; 8/13/18 : 90; 10/16/18 : 84; 11/20/18 : 76; 12/10/18 : 73; 3/6/19 : 81; 4/24/19 : 90; 7/26/19 : 76; 8/14/19 : 64; 12/2/19 : 67; 5/20/20 : 85; 6/17/20 : 115

Source: Morgan Stanley Research Date Format : MM/DD/YY Price Target No Price Target Assigned (NA)
Stock Price (Not Covered by Current Analyst) Stock Price (Covered by Current Analyst)
Stock and Industry Ratings (abbreviations below) appear as ◆ Stock Rating/Industry View
Stock Ratings: Overweight (O) Equal-weight (E) Underweight (U) Not-Rated (NR) No Rating Available (NA)
Industry View: Attractive (A) In-line (I) Cautious (C) No Rating (NR)

Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

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